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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

REPORT OF PINE BEETLE SURVEYS

on the

WARM SPRINGS INDIAN RESERVATION, OREGON

SEASON OF 1945

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December 1, 1945

U.S. GOVERNMENT PRINTING OFFICE 8—9742

SUBJECT—

INDEX NO.—

U. S. Department of Agriculture
Bureau of Entomology and Plant Quarantine
Forest Insect Investigations

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on the

WARM SPRINGS INDIAN RESERVATION, OREGON

SEASON OF 1945

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Submitted by:

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Portland 5, Oregon
December 1, 1945

SUMMARY OF RESULTS

1944 LOSSES (Complete records)

Primary Insect: Western pine beetle in ponderosa pine

Estimated Gross Ponderosa Pine Mortality for 1944:

No. of Trees	Volume (Board Feet)	Board Feet Per Acre	Percent of Stand
28,000	17,000,000	52	0.8

Trend: Definitely upward - 19% above 1943 level

Classification of Infestation: Moderate epidemic

1945 LOSSES (Incomplete Records)

Primary Insect: Western pine beetle in ponderosa pine

Probable Trend: Upward from 1944 level - probably 20 percent higher

Recommendations: Infestation not aggressive and direct control not necessary this time. The reservation must be carefully checked in 1946. A light cut on a sanitation-salvage basis over most of the reservation would be decidedly helpful in reducing these high annual losses.

REPORT OF PINE BEETLE SURVEYS
on the
WARM SPRINGS INDIAN RESERVATION, OREGON
Season of 1945

The 1945 survey of forest insect conditions in the ponderosa pine stands of the Warm Springs Indian Reservation was made during the period from October 23 to 26, 1945. The field work was completed by a three-man crew composed of Mr. Nick Welter and Mr. Terry Courtney of the Indian Service and Mr. W. J. Buckhorn of the Portland Forest Insect Laboratory. The survey was again limited to a 100 percent cruise of six half-section check plots on which all ponderosa pines killed or windthrown since the previous survey were marked and recorded.

Losses in 1944

After a decline in 1943, ponderosa pine mortality increased sharply on the Warm Springs Indian Reservation in 1944. As shown in Table 1, the 1944 losses on the six check plots averaged 120 trees per section, 115 board feet per acre or 1.04 percent of the stand; the average volume losses being 19 percent higher than in 1943. Although two of the check plots showed a definite decrease in the 1944 losses, the infestation has reached moderate epidemic proportions on a large portion of the reservation. This is particularly true of the fringe stands of pine as shown by the record of the Miller Flat plot (# 7). The number of trees killed on this plot was higher than on any other plot and the volume loss was second highest. The 1944 losses in the mixed stands on the Twin Butte plot (# 12) increased noticeably over those of the past year. On this plot the losses are chiefly in mature and over-mature trees of large diameter averaging 1,200 board feet per tree.

The estimated 1944 losses for the reservation as a whole have been placed at 28,000 trees and 17,000,000 board feet. This is equal to approximately 55 trees per section, 52 board feet per acre or 0.8 percent of stand.

Tentative Losses for 1945

At the time of the 1945 survey, approximately 78 percent of the probable losses for the year were evident. It is evident that the trend of pine beetle losses is definitely upward from the 1944 level. Although the indications are that the 1945 losses will be higher than those of the past year, the character of the infestation is not aggressive and therefore is not alarming. Most of the trees spotted on the check plots were single trees with only an occasional group of two or three trees. It is felt that the Miller Flat plot will again show the most number of trees killed but that the Twin Butte plot will suffer the heaviest volume losses in 1945.

Table 1. Results of the 1945 Survey on the Warm Springs Indian Reservation
Ponderosa pine timber killed by insects on 320-acre check plots.

Check Plots				1944 Losses					1945 Losses							
		Ponderosa Pine		Gross Volume BM					Marked in 1945		Estimated Total Losses					
Name and Location	No.	Acres	Volume MBM	No. Trees	Total	Per Acre	% of Stand	Ratio to 1943	Date	No. Trees	Volume BM	No. Trees	Volume BM	BM Per Acre	% of Stand	Ratio to 1944
Bear Springs T6S, R11E, Sec. 19 S/2	5	320	3,350	44	34,530	108	1.03	1.26	10/23	35	26,660	45	35,000	109	1.04	1.02
Ryan's Road T9S, R10E, Sec. 15 E/2	6	320	2,830	57	28,320	88	1.00	.82	10/24	47	36,210	60	45,000	140	1.59	1.59
Miller Flat T9S, R11E, Sec. 8 W/2	7	310	2,350	93	42,140	136	1.79	1.21	10/24	96	40,210	120	50,000	156	2.12	1.19
Twin Butte T10S, R10E, Sec. 5 W/2	12	320	5,980	57	69,280	216	1.15	1.57	10/25	40	52,910	50	70,000	218	1.17	1.01
Metolius Bench T10S, R11E, Sec.32 W/2	14	320	4,830	54	22,850	72	.47	.75	10/26	41	21,730	55	30,000	94	.62	1.31
Tenino Burn T10S, R11E, Sec.4 S/2	20	300	1,540	55	20,620	69	1.34	1.66	10/25	51	21,850	60	30,000	100	1.95	1.45
TOTAL 6 PLOTS		1,890	20,880	360	217,740	115	1.04	1.19		310	199,570	390	260,000	137	1.25	1.20

Recommendations

Although the pine beetle situation on a large portion of the Warm Springs Indian Reservation has reached a moderate epidemic stage, direct control measures do not appear necessary at this time. The reason is twofold: (1) The infestation is not an aggressive one; that is, group killing is not as yet evident, and (2) It is felt that this upward trend may be only temporary and conditions may change for the better in the very near future. However, the situation, especially around Twin Buttes, must be closely checked in 1946 and control measures taken if necessary.

It would be extremely helpful if the entire reservation could be logged on a sanitation-salvage basis as soon as possible in order to eliminate the high annual mortality from pine beetles. In addition to the unit being cut on this basis at the present time, it is recommended that the small block of fringe-type timber around the Miller Flat check plot be cut at an early date. Practically all of the timber on this plot is in poor vigor and is of high risk. It is believed that a fairly heavy cut would be needed to eliminate the high continuing losses in this block.